

**CLAIMS:**

1. A method of cross-connecting the individual optical fibers of a plurality of fiber optic ribbons, comprising the steps of:

providing a first substrate having an adhesive thereon;

5 routing a plurality of individual optical fibers onto the substrate to form at least portions of a plurality of fiber optic input ribbons, reorganizing the fibers on the substrate and forming at least portions of a plurality of fiber optic output ribbons, the fibers extending beyond input and output sides of the substrate to define input tails and output tails of the input ribbons and output ribbons, respectively;

providing a second substrate having an adhesive thereon;

10 routing a plurality of individual optical fibers onto the second substrate to form at least portions of a plurality of fiber optic input ribbons, reorganizing the fibers on the second substrate and forming at least portions of a plurality of fiber optic output ribbons, the fibers extending beyond input and output sides of the substrate to define input tails and output tails of the input ribbons and output ribbons, respectively;

15 placing the second substrate and the fibers routed thereon on top of the first substrate and the fibers routed thereon, such that the fibers of the two substrates combine to form complete input and output ribbons along with their respective input and output tails; using a ribbonizing apparatus to gather the input and output tails into ribbon form; coating the gathered input and output tails on the ribbonizing apparatus to hold the tails in

20 ribbon form; and

stripping the coated tails from the ribbonizing apparatus.

2. The method of claim 1 wherein said individual optical fibers are routed onto the substrates by a mechanical routing apparatus having a routing head.

3. The method of claim 1, including the step of applying a coating over the fibers routed onto the first substrate.

4. The method of claim 1, including the step of applying a coating over the fibers routed onto the second substrate.

5. A method of cross-connecting the individual optical fibers of a plurality of fiber optic ribbons, comprising the steps of:

providing a first substrate having an adhesive thereon;

5 routing a plurality of individual optical fibers onto the substrate by a mechanical routing apparatus having a routing head to form at least portions of a plurality of first fiber optic ribbons, reorganizing the fibers on the substrate and forming at least portions of a plurality of second fiber optic ribbons, the fibers extending beyond the substrate to define first tails and second tails of the first ribbons and second ribbons, respectively;

applying a coating over the fibers routed onto the first substrate;

10 providing a second substrate having an adhesive thereon;

routing a plurality of individual optical fibers onto the second substrate by a mechanical routing apparatus having a routing head to form at least portions of a plurality of first fiber optic ribbons, reorganizing the fibers on the second substrate and forming at least portions of a plurality of second fiber optic ribbons, the fibers extending beyond the second substrate to define first tails and second tails of the first ribbons and second ribbons, respectively;

applying a coating over the fibers routed onto the second substrate; and

20 placing the second substrate and fibers routed thereon on top of the first substrate and the fibers routed thereon, such that fibers of the two substrates combine form complete first and second ribbons along with their respective first and second tails.

6. The method of claim 5, including the step of using a ribbonizing apparatus to gather the first and second tails into ribbon form.

7. The method of claim 6, including the step of coating the gathered first and second tails on the ribbonizing apparatus to hold the tails in ribbon form.

8. The method of claim 7, including the step of stripping the coated tails from the ribbonizing apparatus.

9. A ribbonizing apparatus for gathering a plurality of individual optical fibers into ribbon form, comprising:

a frame;

a plurality of elongated ribbonizing plates, each plate being configured for receiving a  
5 plurality of individual optical fibers and gathering the fibers into ribbon form; and  
means mounting at least some of the ribbonizing plates on the frame for lateral movement  
relative thereto to adjust the relative positions of the plates.

10. The ribbonizing apparatus of claim 9 wherein each ribbonizing plate includes  
a shallow trough in a top face thereof.

11. The ribbonizing apparatus of claim 10 wherein at least one end of said troughs  
is open for laying the fibers thereinto.

12. The ribbonizing apparatus of claim 9 wherein said mounting means include at  
least one guide rod extending transversely through the ribbonizing plates and along which the  
ribbonizing plates are slidably movable.

13. The ribbonizing apparatus of claim 12 wherein said frame includes a pair of  
longitudinal side frame components between which said rod extends.

14. The ribbonizing apparatus of claim 13 wherein said frame includes at least one  
cross frame component on which the ribbonizing plates slidably rest.

15. The ribbonizing apparatus of claim 9 wherein said frame includes a plurality  
of longitudinal frame components joined by a plurality of cross frame components on which  
the ribbonizing plates slidably rest.

16. A ribbonizing apparatus for gathering into ribbon form a plurality of  
individual optical fiber tails emanating from a substrate, comprising:

a frame;

a setup platform on the frame for positioning said substrate; and

5 a plurality of elongated ribbonizing plates extending away from the setup platform,  
each plate being configured for receiving a plurality of individual optical fibers and gathering  
the fibers into ribbon form.

17. The ribbonizing apparatus of claim 16, including means mounting at least some of the ribbonizing plates on the frame for lateral movement relative thereto to adjust the positions of the plates relative to the setup platform.

5 18. The ribbonizing apparatus of claim 17 wherein said mounting means include at least one guide rod extending transversely through the ribbonizing plates and along which the ribbonizing plates are slidably movable.

10 19. The ribbonizing apparatus of claim 16 wherein each ribbonizing plate includes a shallow trough in a top face thereof.

20. The ribbonizing apparatus of claim 19 wherein at least one end of said troughs is open for laying the fibers thereinto.